

Policy and Legal Challenges of Virtual Worlds and Social Network Sites

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Abstract

This paper addresses policy challenges of complex virtual environments such as virtual worlds, social network sites, and massive multiplayer online games. The complexity of these environments—apparent by the rich user interactions and sophisticated user-generated content that they offer—poses unique challenges for policy management and compliance. These challenges are also impacting the life cycle of the software system that implements the virtual environment. The goal of this paper is to identify and sketch important legal and policy challenges of virtual environments and how they affect stakeholders (i.e., operators, users, and lawmakers). Given the increasing significance of virtual environments, we expect that tackling these challenges will become increasingly important in the future.

1. Introduction and Background

In this paper, we explore the distinct characteristics of virtual environments, and identify the legal and policy challenges that they pose. We argue that the complexity of these environments and the richness of interactions that they offer result also in an increase of complexity in the management, compliance, and auditing of policy and legal requirements.

In the following, we address complex computer-generated environments, namely virtual worlds (VWs), social network sites (SNSs), and Massive Multiplayer Online Games (MMOGs) [6] [16]. Examples of VWs are Second Life, There, and Habbo Hotel; examples of SNSs are Facebook, LinkedIn, and Xing; and examples of MMOGs are World of Warcraft, MapleStory, and RuneScape. In the subsequent discussion we will use the term *virtual environment* (VE) when discussing issues that apply to VWs, SNSs, and MMOGs. VEs have in common that they enable multiple users to interact and collaborate in a complex computer-generated environment.

VEs are increasingly gaining significance in terms of

numbers of users and generated revenue.¹ As a result, policy and legal issues are becoming more and more important for the stakeholders of VEs (i.e., users/players, providers/operators, and lawmakers/regulators).

VEs are diverse in the sense that they (1) attract people based on a wide range of different interests such as shared hobbies, sports, religion, and sexual interests, (2) have different purposes such as game-playing, socializing or business, (3) support different interaction patterns such as real-time 3D interactions or asynchronous communication based on message boards, and so on [4]. Consequently, there is no crisp definition of a VE that allows one to draw a clear boundary. In fact, one may view a simple listserv as a social network and, as such, as a VE [18]. A common characteristic of VEs is that there is an emerging culture shaped by social interactions of its members in a virtual environment.

In the following, we contrast VEs with different kinds of web sites. The architecture of the World Wide Web has many characteristics that are similar to VEs and as a result many VEs are based on the Web's infrastructure. For example, many social networks are implemented as web sites, and some 3D worlds run with web browser plug-ins (e.g., Habbo Hotel runs in Adobe's Shockwave player). For discussion purposes, we introduce a classification of web sites, which groups the sites with roughly increasing sophistication in terms of content and interaction models:

brochure-ware: These sites provide information that users can browse (e.g., to obtain information about products and services that they can obtain off-line) [23]. Users do not have to log on to the site and the site is static in the sense that it looks the same for all users.

e-commerce: These sites are run by companies that sell products online. They may be pure online retailers (*e-tailers*) or have a *clicks-and-bricks* hybrid business

¹For example, Xing claims that every day 5.7 million people use their platform. The most popular MMOG is World of Warcraft, whose owners claim to be generating 1 billion USD in revenue per year with over 10 million subscribers [8].

model [19]. To place orders, users have to create an account.

Web 2.0: These sites are characterized by sophisticated functionality that often rival shrink-wrapped software products. These sites typically offer a participatory and interactive user experience [7]. Importantly, these sites have user-generated content where users are *conducers*, that is, they “both consume creative works and simultaneously add creative content to those same works” [21].

The above classification is an idealization because concrete web sites typically have features that blur into other groups. For example, a brochure-ware site may have a form or questionnaire that users can fill out to provide feedback to the site operator, and e-commerce sites often have some kind of personalization (e.g., Amazon’s wishlists) or user-generated content (e.g., book reviews of users).

2. Policy and Legal Challenges

Stakeholders: The two most important stakeholders of VEs are its operators and its users. The relationships between both stakeholders are primarily governed by the policies embodied in the terms of use statement and the privacy policy. Policies often interact with legal requirements. In this context, there are additional stakeholders such as lawmakers that create regulations, and courts that create case law. Hence, policy challenges have to factor in legal requirements as well (e.g., privacy policies are constrained by privacy regulations). There are also organizations such as the Virtual Policy Network (virtualpolicy.net) that aim at bringing together stakeholders from government, academia, and industry. In the following, we discuss a number of selected issues that concern the interaction of operators and users as well as lawmakers. These issues are meant to expose challenges that are particularly relevant to VEs.

Legal considerations: In the early days of the Web, it was often perceived as being free and unregulated [15]. This perception has gradually changed with increasing maturity and commercialization of the Web. VEs have made a similar development in this respect. Many legal issues of the Web and of VEs are addressed by existing laws and case law. However, there are also specific acts (e.g., U.S.’s COPPA) and policies (e.g., ICANN’s UDRP) that have been enacted for cyberspace. It remains to be seen if lawmakers will become active for VEs. On April 1st, 2008 a first hearing by the *Subcommittee on Telecommunications and the Internet* was held on policy concerns of VEs.²

Almost all legal issues that exist in real life are potentially applicable to VEs; this holds especially for 3D VWs.

The only question is how to map virtual incidents to applicable law: Killing a human is not the same as killing an avatar, so the latter is not being considered murder (even though there may be other repercussion of such an act depending on the VW), smoking pot in a VW is not a use of illegal drugs (but may be considered promoting drug abuse), and sexual acts with kid-faced avatars is not child abuse (but potentially child pornography). Prominent legal issues that arise in all kinds of web sites and VEs are copyright and trademark, especially if they allow user-generated content [8]. For e-commerce sites and VEs there is also taxation, fraud and money laundering. In VEs these issues surface if the world has an economic model involving virtual money and users that can own virtual property [13] [14]. Virtual money (e.g., Second Life’s Linden Dollars, There’s Therebucks, and Entropia Universe’s PED) is real in the sense that they can be exchanged for real money and vice-versa. If the VW allows (real-time) user interactions (e.g., avatar movements in 3D and voice chat) there is also the possibility of harassment, assault, and libel. An overarching legal issue is jurisdiction because many sites and VEs are not constrained by national boundaries. For instance, VEs are often implemented as server farms that are located throughout the world. As a consequence, the access, storage, and replication of data may be constrained by different data protection laws. If the VE has a virtual currency and enables gambling, there may be complex legal questions depending on the locations of the operator, its servers, and the users. Interestingly, operators can try to segregate or exclude users. Second Life has a dedicated Teen Area where users are required to be between 13–17 years of age. E-commerce sites can exclude users via restricting shipping to postal addresses in certain countries.

Complexity: From the users’ perspective, policies are important because they spell out their rights and obligations. Unfortunately, these policies are often difficult to read and understand (e.g., privacy policies in the healthcare domain [3]). Furthermore, VEs offer rich user interactions and business models that have to be reflected in their policies. As a result, such policies are comparably complex. While brochure-ware sites can be satisfied by covering only general issues (e.g., license to use, disclaimer, linking, and intellectual property), e-commerce sites also have to address issues such as order acceptance, pricing information, exporting of goods, and disclaimers for special goods such as medicines. Similarly, VEs have to cover issues that are unique to their environment; for example, Second Life’s terms of use addresses trading of its virtual currency.

Table 1 shows statistics of three different terms of use statements: a brochure-ware site (General Electric), an e-commerce site (Wal-Mart), and a VW (Second Life). In these examples, more site complexity translates into an increase in the size of the terms of use. The Flesch read-

²http://energycommerce.house.gov/cmte_mtgs/110-ti-hr

Operator	Type	# words	Flesch
ge.com	brochure-ware	1576	56.3
wal-mart.com	e-commerce	5056	57.4
secondlife.com	3D world	7492	42.2

Table 1. Examples of terms of use statements and their number of words and Flesch readability score

ability³ for Second Life indicates that the terms of use are significantly more difficult to understand than for the other two sites.

Even though these policy statements are already complex, they cannot hope to be all-encompassing. As a result, they represent an element of uncertainty to both operators and users. It is an open question how to minimize uncertainty in policies. The complexity of VEs may prompt operators to look for novel approaches on how to represent and enforce policies, and how to negotiate and contract policies with users.

Compliance: Operators need to manage and enforce the policies, a fact which represents a significant challenge in VEs. First, elements of policies (expressed in natural language) have to be expressed as constraints in the VW, which is ultimately realized in its code. However, mapping the policies down to code and keeping both consistent in case one or the other evolves is difficult to manage. There are many examples of privacy violations caused by wrong implementations of privacy features. For example, in Facebook supposedly private annotations were made visible to all users [9]. In contrast, privacy of e-commerce sites is comparably easy to express because no user is allowed to see any data or interactions of other users. Second, enforcement of policies is difficult in VEs because of the high degree of freedom that users have in interacting with the environment. For example, enforcement of intellectual property (IP) rights in a brochure-ware site is relatively easy because the content publishers can be managed. If simple user-generated content such as book reviews are allowed, the IP violations can be limited by the form of expression (e.g., text only, limited number of words). Furthermore, content such as text is amenable to automated processing, and the content of web sites can be crawled to look for policy violations. In contrast, “crawling” and automated processing of the content of a 3D environment to ensure compliance with policies is a much bigger challenge.

Negotiation and balance: Another challenge of VEs is how to negotiate policies between operators and users. Currently policies are drafted and put into effect by operators without consulting users, and operators try to reserve the

right to change policies at will. This can result in unbalanced policies that put users at a disadvantage. The following is an excerpt of a legal notice from the web site of a large U.S. corporation in 1998 (essentially brochure-ware):⁴

“Any visitor to the Valero web site who provides information to Valero agrees that Valero has unlimited rights to such information as provided, and that Valero may use such information in any way Valero chooses. Such information as provided by the visitor shall be non-confidential.”

In the past policies have been criticized if perceived as unbalanced. For example, the first terms of use of Adobe’s Photoshop Express stated that users who uploaded pictures in effect

“grant Adobe a worldwide, royalty-free, nonexclusive, perpetual, irrevocable, and fully sublicenseable license to use, distribute, derive revenue or other remuneration from, reproduce, modify, adapt, publish, translate, publicly perform and publicly display such [pictures].”

After this policy was widely criticized, Adobe made changes that limited its rights to the pictures. In contrast to most MMOGs, Second Life permits the creators of virtual property to own their creations [1]. Second Life’s terms of use say explicitly:

“You retain copyright and other intellectual property rights with respect to Content you create in Second Life, to the extent that you have such rights under applicable law.”

Operators have to balance their desire to control and own user-generated content and private data with the desire of users to retain their own creations and to protect their privacy. However, when users retain intellectual property of their creations, certain challenges have to be faced when these creations become part of the VE. For instance, if a user sells one of his virtual creations, certain rights attached to it may have to be transferred or licensed to the new owner; and if users retain the copyright of their avatars, what about screenshots with a commercial interest that are depicting them? An unbalanced policy that is not freely bargained (i.e., a *contract of adhesion*) and that puts users at a clear disadvantage increases the operator’s risk that courts will find it *unconscientious*—and as a result may refuse to (partially) enforce it [12]. Currently users have no negotiation power of policies (except via lobbying and media coverage), even though operator-driven projects such as BetterEULA (bettereula.com) provide a platform for user input. Also, European customer protection laws have been passed on the assumption that end-consumers have no choice other than to accept the policies imposed on them. In the future,

³The Flesch Reading Ease measures how easy it is to read a text with a score from 0 to 100, where a lower score indicates a more difficult text. Scores of 50–59 are considered fairly difficult and 30–49 difficult.

⁴<http://web.archive.org/web/19980530081620/www.valero.com/html>

operators may want to offer personalized policies that are semi-automatically negotiated. Users and service providers could state their privacy needs in machine-readable data for automated negotiation of a privacy policy that is acceptable for both sides [17]. Again, this will result in increasing complexity for policy management and compliance [2]. This complexity may be tackled with policy-driven systems [5].

Generally, one can argue that users can switch VEs if they are not happy with its policies, but there are significant barriers in practice. For e-commerce sites there is a low cost to user to switch operators (e.g., abandoning Barnes & Noble in favor of Amazon) because it requires to only open up a new account. For social networks, switching of sites (e.g., from Xing to LinkedIn) means losing all the effort of populating ones profile and also ones social identity. If users have heavily invested (also monetarily) in VEs (e.g., purchase of land in Second Life, or building up an avatar in World of Warcraft), switching is even more prohibitive (even though Bartle points out that users could switch by selling and buying avatars on eBay [16, p. 111]). Finally, users tend to choose a VE for its content, not its policies. There is no effective competition between operators of VEs for the most user-friendly policy and as a consequence many stipulations that are disadvantageous for users can be found in nearly all policies.

Privacy: Privacy concerns are an important issue that serves as a good example to expose policy challenges of VEs [6]. On brochure-ware sites there are only privacy issues of tracking the movements of users on the site. E-commerce sites have to protect private data about users such as address and billing information. In contrast, users create and expose all kinds of private information on VEs, and VEs are also generating private data about users (via profiling and mining techniques [11]). Examples of private information are user details (e.g., age, location, gender, and testimonials), connectivity (e.g., friends and groups), content (e.g., photos, commenting, and tagging) [7]. Facebook, for instance, supports the creation of all of the aforementioned information. Importantly, Quirchmayr and Wills make the point that “the more data we collect about a person, the more sensitive this data becomes, because the increasing amount of available data allow to construct an increasingly complete profile” [20]. A less-welcome scenario is that automated reasoning may create wrong knowledge about a person, which is then difficult to purge or change [22, p. 152ff]. Cormode and Krishnamurthy have studied the unique characteristics of the Web 2.0 and conclude that “there are significant challenges in allowing users to understand privacy implications and to easily express usage policies for their personal data” [7]. VEs may push user monitoring and profiling to new levels. Even for 3D worlds it seems feasible to record fine-grained movements and inter-

actions of avatars. Privacy concerns in VEs are similar to the ones in real life. If the location data and history of a cell phone is considered private, the same could be argued for an avatar—but there may be sensible reasons for doing this (e.g., tracking of virtual commerce transactions). It is currently difficult to assess for users whether a VW’s privacy policy and preference settings are adequate for their personal perception of privacy.

Evolution: Another challenge is the evolution of policies. As mentioned before, an operator has a strong interest not to be restricted in any form when making changes to policies of the VE as well as making changes to the VE itself. To preserve consistency, a certain change in the VE may mandate a corresponding change to its policy, and vice-versa. In a sense, operators are the Gods of VEs because they have the means to change its behavior as they see fit—in this respect, “code is law” [15]. Indeed, Bartle, one of the pioneers of MMOGs, argues that operators should be allowed to make drastic changes to a VW, including its destruction, because users always have the option to abandon it [16, p. 114f]). The risks that users of VEs face have the following analogy: “In the real world, those who make investments in a country expose themselves to uniquely ‘sovereign’ risks because of the danger that the government might alter the laws under which they claim to hold assets” [10]. However, whereas in real life the investors will probably not be in a position to sue the sovereign, users of a VE can certainly sue its operator. The more users have invested in a VE and have come to depend on certain behaviors of the VE, the more likely that they will sue if they believe that a change in behavior constitutes a misconduct on the side of the operator. In this respect, code is not the supreme law because its evolution is constrained by policy. For instance, there are users that derive significant revenue from Second Life so that their “business activities have been successful enough to replace their real-life income,” [1] as exemplified by a user who claims to have earned \$1 million USD with virtual property dealings. If virtual property is in fact real as argued by Lastowka and Hunter [13], actions by the operator that destroy or de-value property may be actionable under law. Interestingly, Second Life is indeed influencing its virtual real estate market by controlling the supply rate of new land.⁵ This poses the question of the legal consequences if actions taken by the operator—intentionally or unintentionally—cause a significant de-valuation of all or some property. Lastly, this leads to the question how operators would be able to terminate a highly developed VW. Presumably, the operator would not have enough assets to cash-out all users. However, so far no VW that models a complex economy such as Second Life has shut down.

⁵<http://secondlife.reuters.com/stories/2008/06/19/linden-free>

3. Conclusions

In this paper we have identified key challenges of virtual environments with respect to the management, compliance, negotiation, and evolution of policies. We have contrasted challenges of virtual environments with the policy issues faced by different groups of web sites (i.e., brochure-ware, e-commerce, and Web 2.0), exposing that virtual environments exhibit distinct characteristics that make policy issues particularly challenging.

Important questions in this context are:

- How to ensure consistency among policies (e.g., policies embodied in terms of use statements and policies embodied in the code)? The complexity of virtual environments makes it difficult to keep policies consistent, and to define policies in code.
- How to effectively enforce policies? On the one hand, there are technical challenges (e.g., automatically detecting a virtual trademark violation). On the other hand, the privacy of users has to be respected as well.
- How to negotiate policies and how to give users more negotiation power? Given that policies express obligations of the user, a more balanced approach is needed so that unbalanced contracts of adhesion can be avoided.
- How to evolve policies and the behavior of the virtual environment? In both cases, operators are constrained by user and legal considerations.
- How to manage policies in an uncertain legal environment? Currently there is little case law to guide operators on how to meet legal requirements.

We believe that the increasing significance of virtual environments and their unique characteristics deserve further exploration and research of their policy issues by researchers in the legal, governance, and computer science fields.

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